

REMARKS

Upon entry of this amendment, claims 1-14 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 1, 5 and 6 to fix minor informalities. Since such amendments are made to correct minor, basic elements, Applicant respectfully submits that that they do not narrow the scope of the claim and do not raise any Festo implications. The amendments to claims 1, 5 and 6 were not made for reasons of patentability.

Applicant thanks the Examiner for indicating that the drawings filed on August 21, 2003 are accepted. In addition, Applicant also thanks the Examiner for entering the amendment filed on August 21, 2003.

I. Summary of the Office Action

The Examiner objected to claims 5 and 6 and rejected claim 1 under 35 U.S.C. § 112, second paragraph. In addition, the Examiner rejected claims 1, 5 and 8 under 35 U.S.C. § 102 and claims 2-4, 6-7 and 9 to 14 under 35 U.S.C. § 103. Applicant respectfully traverses these rejections in view of the following comments.

II. Claim Objections

The Examiner objected to claims 5 and 6 because of minor informalities. Applicant has revised the claims, and respectfully submits that the claims as now presented no longer include the potential informalities mentioned by the Examiner. Applicant therefore respectfully requests the Examiner to withdraw these objections to the claims.

III. Claim Rejections under 35 U.S.C. § 112

The Examiner rejected claim 1 under section 112, second paragraph, for insufficient antecedent basis. Applicant respectfully thanks the Examiner for pointing out, with particularity, the aspects of the claim thought to be indefinite. Applicant respectfully requests the Examiner to withdraw this rejection in view of the self-explanatory claim amendment being made herein.

IV. Claim Rejections under 35 U.S.C. § 102(e)

Claims 1-2, 5, 8 and 10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,512,613 B1 to Tanaka et al. (hereinafter "Tanaka"). Applicant respectfully requests the Examiner to withdraw this rejection. Applicant files herewith a verified English-language translation of the French priority document. Each of the claims is respectfully submitted to be fully supported by the French priority document. The filing of the English-language translation perfects Applicant's claim to benefit from the foreign priority date of February 19, 1999 with respect to all of Applicant's claims.

In view thereof, and since the earliest effective date of the Tanaka patent as a reference is the PCT filing date of March 24, 1999 (which is later than February 19, 1999), Tanaka is removed as a reference. This rejection of claims 1-2, 5, 8 and 10 is based on Tanaka. Since Tanaka is not a prior art reference, the rejection is thus literally moot. Applicant, therefore, respectfully requests the Examiner to withdraw this rejection under 102(e) in view of Tanaka reference.

V. Claim Rejections under 35 U.S.C. § 102(b)

In addition, claims 1, 5 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,524,144 to Suzuki (hereinafter “Suzuki”). Applicant respectfully traverses this rejection and requests the Examiner to reconsider the rejection in view of the following comments.

Of these claims, only claim 1 is independent. Claim 1 requires:

An optical line comprising:...at least one set of channel regenerators,
wherein each one of the set of channel regenerators regenerated only a predetermined respective group of channels, each respective group forming only a subset of a set of channels, and each channel of the groups is predetermined based on channel wavelength...

From hereinafter, this recited limitation will be referred to as “regenerator for a predetermined group of channels” for the sake of linguistic convenience only. The Examiner asserts that claim 1 is directed to a multichannel wavelength-division multiplex fiber optic transmission system and is anticipated by Suzuki. The Examiner asserts that Suzuki’s terminal device which serves as an optical receiver and transmitter for some channels and optical repeater for other channels is equivalent to a regenerator for a predetermined set of channels as set forth in claim 1 (see page 3 of the Office Action). Applicant respectfully disagrees with the Examiner. Applicant has carefully studied Suzuki’s discussion of the terminal which serves as a receiver, a transmitter and a repeater, which is not similar to a regenerator for a predetermined set of channels, as set forth in claim 1.

Suzuki teaches optical transmission without electric regeneration (col. 9, lines 50 to 55). In particular, Suzuki teaches using an optical sender 1, an optical receiver 2 and three optical repeaters 3 and an optical fiber 4. The optical repeater may change the transmission rate depending on the wavelength. For example, a terminal device 5 performs channel branching and channel combination by means of optical demultiplexer 54 and optical multiplexer 55, and serves as an optical sender 51 or an optical receiver 52 for certain wavelength and as an optical repeater 53 for other wavelengths (col. 12, lines 25 to 35).

However, Suzuki teaches that all the wavelengths, which are not branched out through an optical receiver 52 or through an optical sender 51 are handled in a similar manner, i.e. they are all amplified by the optical repeater 53. Suzuki's repeater simply re-amplify a signal so that it can propagate further on the optical line. As such, there is no need to use a repeater for the signals received in the optical repeater 52 and the signals emitted by the optical sender 51. In short, Suzuki does not teach or suggest a repeater, which only repeats a subset of the wavelength channels.

Moreover, Suzuki just teaches a repeater for certain wavelengths but not a regenerator. A repeater simply amplifies the signal; it is not a regenerator, which reshapes the signal. In fact, Suzuki teaches avoiding regenerators by using three repeaters. Suzuki's repeaters, which only amplify the signal, are somewhat similar to the amplifiers 8, shown in the illustrative, non-limiting embodiment of the present invention (fig. 1). In short, Suzuki fails to teach or suggest a regenerator for a predetermined group of channels.

Therefore, regenerator for a predetermined group of channels as set forth in claim 1 is not suggested or taught by Suzuki, which lacks a regenerator for a predetermined group of channels. For at least these reasons, Applicant respectfully submits that independent claim 1 is patentably distinguishable from Suzuki. Applicant, therefore, respectfully requests the Examiner to reconsider and withdraw this rejection of independent claim 1. Also, Applicant respectfully submits that claims 5 and 8 are allowable at least by virtue of their dependency on claim 1.

VI. Claim Rejections under 35 U.S.C. § 103(a)

Claims 2-4 and 6-7, 11-14 stand rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses this rejection and respectfully requests the Examiner to reconsider this rejection in view of the following remarks.

Suzuki and ITU G.692

Claim 2 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki in view of ITU G.692 (ITU-T G.692, "Optical Interfaces for Multichannel System with Optical Amplifiers", October 1998, pp. 1, 4-5). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claim 2. Applicant has already demonstrated that Suzuki does not meet all the requirements of independent claim 1. ITU G.692 is relied upon only for its teachings of a number of repeaters being a sub-multiple of the number of channels. Clearly, ITU-G.692 does not compensate for the above-identified deficiencies of Suzuki. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claim 2 is dependent upon claim 1, it may be patentable at least by virtue of its dependency.

Tanaka and Kinoshita

Claims 3 and 11-13 stand rejected under 35 U.S.C. § 103(a) as being anticipated by Tanaka in view of U.S. Patent No. 6, 023, 366 to Kinoshita (hereinafter “Kinoshita”). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claims 3 and 11-13. Applicant has already demonstrated that Tanaka is not a prior art reference with respect to the present invention. Kinoshita is relied upon only for its teachings of a four-channel WDM transmission system (which uses repeaters to amplify all channels in the system) and its teachings of a supervisory channel (see pages 5-7 of the Office Action). Clearly, Kinoshita does not teach the subject matter of claim 1. Since claims 3, 11-13, are dependent upon claim 1, they may be patentable at least by virtue of their dependency.

Tanaka and Cao

Claims 4 and 6-7 stand rejected under 35 U.S.C. § 103(a) as being anticipated by Tanaka in view of U.S. Patent No. 6,337,755 B1 to Cao (hereinafter “Cao”). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claims 4 and 6-7. Applicant has already demonstrated that Tanaka is not a prior art reference with respect to the present invention. Cao is relied upon only for its teachings of a simple regenerator (see page 5 of the Office Action) and as such fails to cure the deficient teachings of Tanaka.

To begin, Cao does not teach the subject matter of claim 1. Moreover, Cao only teaches a regenerator but there is no motivation to combine Cao’s regenerator with the transmission system of Suzuki. For example, Suzuki uses the repeaters to replace regenerators. In particular, Suzuki teaches that optical signal transmission is better than an electrical one. Under the

circumstances, since optical transmitters transmit optical signals of a stable wavelength even under the modulation, optical amplifiers, etc. are developed without an electric regeneration (col. 1, lines 20 to 25). Therefore, Suzuki, for example, teaches that regenerators are disadvantageous and attempts to use repeaters instead.

The fact that Cao teaches that optical regenerators are preferred over the electrical ones does not teach or suggest replacing a repeater with a regenerator. In general, regenerators are expensive and complex; therefore, in certain instances repeaters are preferred. In short, there is no motivation for combining Suzuki with Cao. Moreover, Cao does not teach the subject matter of claim 1. Since claims 4 and 6-7 are dependent upon claim 1, they may be patentable at least by virtue of their dependency.

Suzuki and Bo

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being anticipated by Suzuki in view of Bo (W. Bo et al., “Fiber Grating Based Optical Add/Drop Multiplexer with Low Interferometric Crosstalk”, International Conference on Communication Technology, ICCT’98, October 22-24, 1998). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claim 9. Applicant has already demonstrated that Suzuki does not meet all of the requirements of independent claim 1. Bo is relied upon only for its teachings of a four-channel WDM transmission system, which uses fiber grating (see page 6 of the Office Action). Clearly, Bo does not compensate for the above-identified deficiencies of the Suzuki reference. Together, the combined teachings of these references would not have (and could not have) led

the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claim 9 is dependent upon claim 1, it may be patentable at least by virtue of its dependency.

Suzuki and Charplyvy

Finally, claim 14 stands rejected under 35 U.S.C. § 103(a) as being anticipated by Suzuki in view of U.S. Patent No. 5,847,862 to Charplyvy et al. (hereinafter “Charplyvy”). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claim 14. Applicant has already demonstrated that Suzuki does not meet all the requirements of independent claim 1. Charplyvy is relied upon only for its teachings of placing amplifiers between the regenerators and as such clearly fails to cure the deficient teachings of Suzuki (see page 7 of the Office Action). In addition, the Examiner asserts that one of ordinary skill in the art would have been motivated to combine the two references because Charplyvy’s amplifiers minimize the placement of expensive regenerators.

However, Suzuki’s repeaters are very similar to Charplyvy’s amplifiers. In fact, it is Suzuki’s repeaters that amplify the signal, thereby avoiding expensive regenerator. In short, Charplyvy’s teaching of a particular placement of amplifiers is very similar to Suzuki’s teaching of a repeater to avoid/minimize the number of regenerators. In short, one of ordinary skill in the art would not have been motivated to combine Charplyvy’s amplifiers on top of Suzuki’s repeaters. The two perform similar functionality and achieve similar result. As such, there is no motivation to combine the references in the manner suggested by the Examiner.

In short, Charplyvy does not compensate for the above-identified deficiencies of Suzuki. Together, the combined teachings of these references would not have (and could not have) led

Amendment Under 37 C.F.R. § 1.111
U.S. Application No.: 09/493,091

Attorney Docket No.: Q57709

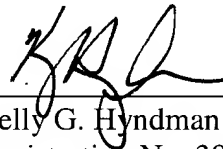
the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claim 14 is dependent upon claim 1, it may be patentable at least by virtue of its dependency.

VII. Conclusion and request for telephone interview

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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23373

CUSTOMER NUMBER

Date: April 28, 2004